

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 Claim 1 (currently amended): A method of processing a
2 plurality of Z-vectors, each Z-vector including Z
3 elements, each element including K bits, where Z is a
4 positive integer greater than 1 and K is a positive
5 integer, the plurality of Z-vectors corresponding to a
6 binary codeword, portions of said binary codeword having
7 a direct mapping relationship to a plurality of
8 transmission units, said plurality of Z-vectors being
9 stored in a set of D memory arrays, where D is an integer
10 greater than zero, each memory array including Z rows of
11 memory locations, each memory location of a row
12 corresponding to a different array column, each array
13 column corresponding to a different one of said plurality
14 of Z-vectors, each Z-vector identifying one column in
15 each of said D memory arrays, the method comprising:
16 generating a series of sets of control information,
17 each set of control information including:
18 i) a Z-vector identifier;
19 ii) a row identifier; and
20 for at least one generated set of control
21 information:
22 reading P times K divided by D bits, where
23 P is a positive integer, from each column identified by
24 the Z-vector that is identified by the Z-vector
25 identifier included in said at least one generated set of
26 control information;
27 wherein said method of processing is used to process
28 received transmission units; and

29 wherein K is an integer greater than zero and is a
30 number of bits used to represent a soft value
31 corresponding to one bit of said binary codeword.

1 Claim 2 (original): The method of claim 1,
2 wherein said method of processing is performed by a
3 transmission device prior to transmission of said
4 transmission units;
5 wherein D is 1; and
6 wherein K is 1.

1 Claim 3 (original): The method of claim 2, further
2 comprising:
3 for said at least one generated set of control
4 information:
5 generating from said P bits read from memory, a
6 portion of the transmission unit identified by the
7 transmission unit identifier included in said at
8 least one generated set of control information.

1 Claim 4 (currently amended): ~~The method of claim 3.~~ A method
2 of processing a plurality of Z-vectors, each Z-vector
3 including Z elements, each element including K bits,
4 where Z is a positive integer greater than 1 and K is a
5 positive integer, the plurality of Z-vectors
6 corresponding to a binary codeword, portions of said
7 binary codeword having a direct mapping relationship to a
8 plurality of transmission units, said plurality of Z-
9 vectors being stored in a set of D memory arrays, where D
10 is an integer greater than zero, each memory array
11 including Z rows of memory locations, each memory
12 location of a row corresponding to a different array

13 column, each array column corresponding to a different
14 one of said plurality of Z-vectors, each Z-vector
15 identifying one column in each of said D memory arrays,
16 the method comprising:
17 generating a series of sets of control information,
18 each set of control information including:
19 i) a Z-vector identifier;
20 ii) a row identifier; and
21 for at least one generated set of control
22 information:
23 reading P times K divided by D bits, where
24 P is a positive integer, from each column identified by
25 the Z-vector that is identified by the Z-vector
26 identifier included in said at least one generated set of
27 control information;
28 wherein said method of processing is performed
29 by a transmission device prior to transmission of said
30 transmission units;
31 wherein D is 1;
32 wherein K is 1;
33 for said at least one generated set of control
34 information, generating from said P bits read from
35 memory, a portion of the transmission unit identified by
36 the transmission unit identifier included in said at
37 least one generated set of control information;
38 wherein said plurality of Z-vectors includes n of
39 said plurality of Z-vectors, where n is a positive
40 integer greater than 1; and
41 wherein generating a series of sets of control
42 information further includes:
43 incrementing a Z-vector identifier value by n
44 divided by M, where M is the number of portions of

45 the transmission unit having a direct mapping
46 relationship to a portion of the binary codeword
47 said portion of the binary codeword including M
48 times P bits.

1 Claim 5 (original): The method of claim 4,
2 wherein each portion of a transmission unit is a
3 symbol; and
4 wherein the transmission unit is a dwell.

1 Claim 6 (currently amended): The method of claim 3,
2 wherein generating a series of sets of control
3 information further includes:
4 incrementing the z-vector identifier value M times;
5 after incrementing the z-vector value M times:
6 i) resetting the Z z-vector identifier value to
7 the z-vector identifier value existing at the
8 start of said incrementing; and
9 ii) incrementing a row identifier value by P.

1 Claim 7 (previously presented): The method of claim 6,
2 wherein generating a series of sets of control
3 information further includes:
4 after incrementing the row identifier value Z
5 divided by P times, where Z divided by P times is an
6 integer,
7 setting the row identifier value to zero; and
8 incrementing the Z-vector identifier value by a
9 preselected positive integer value.

1 Claim 8 (original): The method of claim 7, wherein said
2 preselected positive integer value is one.

1 Claim 9 (original): The method of claim 2, wherein said
2 binary codeword is a low density parity check codeword.

1 Claim 10 (canceled):

1 Claim 11 (original): The method of claim 10, where D is
2 equal to K or 1.

1 Claim 12 (original): The method of claim 11, further
2 comprising:

3 for said at least one generated set of control
4 information:

5 supplying the P bits read from memory to a
6 demodulator.

1 Claim 13 (previously presented): The method of claim 10,
2 further comprising:

3 for said at least one generated set of control
4 information:

5 generating, from said P bits read from memory,
6 a portion of the transmission unit identified by the
7 transmission unit identifier included in said ~~each~~
8 generated set of control information.

1 Claim 14 (previously presented): The method of claim 13,
2 wherein said plurality of Z-vectors includes n of
3 said Z-vectors, where n is a positive integer greater
4 than 1; and

5 wherein generating a series of sets of control
6 information further includes:

7 incrementing a Z-vector identifier value n
8 divided by M , where M is the number of portions of
9 the transmission unit having a mapping relationship
10 to a portion of the binary codeword said portion of
11 the binary codeword including M times P bits.

1 Claim 15 (previously presented): The method of claim 13,
2 wherein generating a series of sets of control
3 information further includes:
4 incrementing a row identifier value by P
5 incrementing the Z-vector identifier value M times;
6 after incrementing the Z-vector value M times:
7 i) resetting the Z-vector identifier value to
8 the Z-vector identifier value existing at the
9 start of said incrementing; and
10 ii) incrementing a row identifier value by P .

1 Claim 16 (previously presented): The method of claim 15,
2 wherein generating a series of sets of control
3 information further includes:
4 after incrementing the row identifier value Z
5 divided by P times, where Z divided by P times is an
6 integer,
7 setting the row identifier value to zero; and
8 incrementing the Z-vector identifier value by a
9 preselected positive integer value.

1 Claim 17 (original): The method of claim 16, wherein
2 said preselected positive integer value is one.

1 Claim 18 (currently amended): The method of claim 1 ~~10~~,
2 wherein said binary codeword is a low density parity
3 check codeword.

1 Claim 19 (currently amended): An apparatus for
2 processing a plurality of Z-vectors, each Z vector
3 including Z elements, each element including K bits,
4 where Z is a positive integer greater than 1 and K is a
5 positive integer, the plurality of Z vectors
6 corresponding to a binary codeword, portions of said
7 binary codeword having a direct mapping relationship to a
8 plurality of transmission units, said apparatus
9 comprising:
10 memory including a set of D memory arrays for
11 storing said plurality of Z-vectors, where D is an
12 integer greater than zero, each memory array including Z
13 rows of memory locations, each memory location of a row
14 corresponding to a different array column, each array
15 column corresponding to a different one of said plurality
16 of Z vectors, each Z-vector identifying one column in
17 each of said D memory arrays;
18 memory access control module for generating a series
19 of sets of control information, each set of control
20 information including:
21 i) a Z-vector identifier;
22 ii) a row identifier; and
23 means for reading P times K divided by D bits,
24 from said memory, where P is a positive integer greater
25 than zero, from each column identified by the Z-vector
26 that is identified by the Z-vector identifier included in
27 at least one generated set of control information; and

28 wherein K is an integer greater than zero and is a
29 number of bits used to represent a soft value
30 corresponding to one bit of said binary codeword.

1 Claim 20 (original): The method of claim 1,
2 wherein D is 1; and
3 wherein K is 1.

1 Claim 21 (previously presented): The method of claim 19,
2 wherein said memory access control modules includes:
3 a first counter for generating said Z-vector
4 identifier; and
5 a second counter for generating said row identifier.

1 Claim 22 (currently amended): A machine readable medium
2 comprising machine executable instructions for
3 controlling a computer device to process a plurality of
4 Z-vectors, each Z-vector including Z elements, each
5 element including K bits, where Z is a positive integer
6 greater than 1 and K is a positive integer, the plurality
7 of Z-vectors corresponding to a binary codeword, portions
8 of said binary codeword having a direct mapping
9 relationship to a plurality of transmission units, said
10 machine executable instructions including instructions
11 used to control the computer device to:
12 generate a series of sets of control information,
13 each set of control information including:
14 i) a Z-vector identifier; and
15 ii) a row identifier; and
16 for at least one generated set of control
17 information:

18 read P times K divided by D bits, where P is a
19 positive integer greater than zero, from each column
20 identified by the Z-vector that is identified by the Z-
21 vector identifier included in said at least one generated
22 set of control information; and
23 wherein K is an integer greater than zero and
24 is a number of bits used to represent a soft value
25 corresponding to one bit of said binary codeword.